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TABLES TO FACILITATE FITTING  $S_B$  CURVES II.  
BOTH TERMINALS KNOWN

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# TABLES TO FACILITATE FITTING $S_B$ CURVES II. BOTH TERMINALS KNOWN

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## 1. Description

If  $Z$  is a unit normal variable and

$$Z = \gamma + \delta \log[(X-\xi)/(\xi+\lambda-X)]$$

$$(\delta > 0; \quad \xi < X < \xi + \lambda),$$

then  $X$  has an  $S_B$  distribution [1].

Estimation of  $\xi$ ,  $\lambda$ ,  $\gamma$  and  $\delta$  from the first four moments of  $X$  has been described in [2], which contains tables to assist the calculations. It often is the case that the range of variation of  $X$  is known in advance. In such cases,  $\xi$  and  $\lambda$  are known, and it is only necessary to estimate the parameters  $\gamma$  and  $\delta$ . This may be done using the first two moments of  $X$ .

If  $Y = (X-\xi)/\lambda$ , then

$$Z = \gamma + \delta \log [Y/(1-Y)]$$

and the distribution of  $Y$  depends only on  $\gamma$  and  $\delta$ . Values of  $\gamma$  and  $\delta$  are obtained by solving the equations

$$\text{mean } Y = \lambda^{-1}[(\text{mean } X) - \xi] = \mu'_1(\gamma, \delta)$$

and

$$\text{s.d. } Y = \lambda^{-1}[\text{s.d. } X] = \sigma(\gamma, \delta)$$

$$(\text{s.d.} \equiv \text{'standard deviation'}).$$

Table 2 gives solutions of these equations for  $\gamma$  and  $\delta$ . Values of  $\mu'_1$  (mean  $Y$ ) and  $\sigma$  (s.d.  $Y$ ) are at intervals of 0.01. Since

$$(\text{mean } Y)^2 + (\text{s.d. } Y)^2 = (\text{mean } Y^2) \leq \text{mean } Y$$

(because  $0 \leq Y \leq 1$ ), it follows that

$$\sigma^2 \leq \mu_1'(1-\mu_1').$$

For each value of  $\mu_1'$ , values of  $\sigma$  are given, in descending order, from near the upper limit of  $\sqrt{\mu_1'(1-\mu_1')}$  down to a value not exceeding 0.05. The lower limit varied with difficulty of computation (see Section 3). For very small values of  $\sigma$ , a lognormal distribution is likely to give good approximation. Except for small values of  $\sigma$  ( $< 0.10$ , say) linear interpolation for  $\gamma$  and  $\delta$ , with respect to both  $\mu_1'$  and  $\sigma$ , gives quite good results, though second differences for  $\delta$  are desirable for  $\sigma < 0.20$ .

## 2. Example

As an example, we will consider the data used in [1] (Example 1, Table 4). The first two columns of Table 1 show the observed distribution to be fitted. As in [1], two curves were fitted:

(1) Assuming that the groups corresponded to  $X$  values  $-0.5$  to  $0.5$ ,  $0.5$  to  $1.5$ , ...,  $9.5$  to  $10.5$ .

(2) Assuming that the groups were  $0$  to  $0.5$ ,  $0.5$  to  $1.5$ , ...,  $9.5$  to  $10$ .

In each case, the mean and standard deviation were computed on the assumption that all values were concentrated at the mid-point of the group. The calculations are summarized below.

Grouping	X		Y		$\hat{\gamma}$	$\hat{\delta}$
	mean	s.d.	mean	s.d.		
(1)	6.1125	4.1358	0.601	0.376	-0.2838	0.2860
(2)	6.0087	4.1775	0.601	0.418	-0.2658	0.1770.

The fitted frequencies are shown in the third and fourth columns of Table 1. As in [1], the choice (2) of group boundaries gives much the better

fit. The values in the last two columns of Table 1 are reproduced from [1]. The  $S_B$  curves here were fitted by making the frequencies in the first and last groups agree with the observed values. Fitting by moments gives worse results in these two groups, of course, but with grouping (2) gives better results in the middle of the distribution.

Table 1.

Degree of cloudiness	Observed frequencies	Fitted by moments		Fitted by percentile points	
		$S_B(1)$	$S_B(2)$	$S_B(1)$	$S_B(2)$
0	320	292.3	369.4	320.0	320.0
1	129	115.2	116.3	100.9	120.9
2	74	82.7	67.4	73.9	72.0
3	68	73.3	53.4	63.8	57.5
4	45	68.4	47.9	59.8	52.1
5	45	68.5	47.0	59.9	51.6
6	55	72.6	48.1	63.4	54.9
7	65	85.8	59.5	72.0	63.9
8	90	98.4	77.1	90.0	85.5
9	148	150.7	144.9	135.4	160.7
10	676	607.0	684.1	676.0	676.0

### 3. Calculation of the Tables

The generation of these tables for  $\mu'_1 \neq 0.50$  was carried out in the same basic manner as that described in [2] for finding  $\delta$  and  $\gamma$  as functions of  $\sqrt{\beta_1}$  and  $\beta_2$ . However, as a result of the curvature of curves  $\delta =$  constant, for small  $\delta$  in the  $(\mu, \sigma)$  space, it was found necessary to do the calculations which involved small values of  $\delta$  in the  $(\mu'_1, \mu'_2)$  space ( $\mu'_2 = \sigma + \mu_1'^2$ ). Also, the extreme curvature of curves for fixed  $\delta$  and fixed  $\gamma$  and the small angle of intersection between such lines in most regions of the  $(\mu'_1, \sigma)$  space when  $\delta$  was greater than 2 and in some regions when  $\delta$  was as small as 0.5 prevented the use of this space for all of the calculations.

Anticipating some difficulty with the curvature of these spaces, a table consisting of values of  $\mu_1'$ ,  $\mu_2'$  and  $\sigma$  as functions of  $\delta$  and  $\gamma$ , for  $\delta$  between 0 and 6 and  $\gamma$  between 0 and 6 was generated. For each value of  $\mu_1'$  desired, values of  $\sigma$  were generated in decreasing order and the corresponding values of  $\mu_2'$  calculated. The  $(\mu_1', \mu_2')$  space was then searched for an appropriate 'quadrilateral' and this 'quadrilateral' subdivided as in the previous set of calculations. When, because of the extreme curvature of the curves for fixed  $\delta$  and fixed  $\gamma$  in this space, the enlarging technique described in [2] did not work satisfactorily, the program would try for the next values of  $\mu_1'$  and  $\sigma$ . Since the calculations were done for only a few values of  $\mu_1'$  at a time, it was usually possible to select a value of  $\delta$  for defining a boundary for the useful part of the  $(\mu_1', \mu_2')$  space for the next few values of  $\mu_1'$ . Beyond this boundary, the program would use the  $(\mu_1', \sigma)$  space for the necessary calculations.

Because of some uncertainty in the appropriate choice of the above  $\delta$  boundary for each  $\mu_1'$ , the results for some of the desired points were not obtained in the first series of calculations. These points were ignored until later when all such points were collected together and the program altered slightly to handle these points in the appropriate choice of space.

For  $\mu_1' = 0.50$ , values of  $\sigma$  were generated for various values of  $\delta$  between 0 and 6. An interval containing the desired  $\sigma$  value was then selected and repeatedly subdivided to obtain the desired result.

All of the subdividing procedure were continued until the values of both  $\mu_1'$  and  $\sigma$  were correct to within tolerances of 0.00001. The results were then rounded as in [2] to obtain the published results.

## References

- [1] Johnson, N.L. (1949), Systems of frequency curves generated by methods of translation, *Biometrika*, 36, 149-176.
- [2] Johnson, N.L. and Kitchen, J.O., *Tables to facilitate fitting  $S_B$  curves*, Univ. N. Carolina Mimeo Series No. 683.

TABLE 2

$$\mu_1' = 0.50$$

(Y = 0)		(Y = 0)	
$\sigma$	$\delta$	$\sigma$	$\delta$
0.49	0.0248	0.26	0.7143
0.48	0.0493	0.25	0.7618
0.47	0.0736	0.24	0.8125
0.46	0.0977	0.23	0.8669
0.45	0.1219	0.22	0.9254
0.44	0.1462	0.21	0.9886
0.43	0.1706	0.20	1.057
0.42	0.1954	0.19	1.132
0.41	0.2205	0.18	1.215
0.40	0.2462	0.17	1.305
0.39	0.2723	0.16	1.407
0.38	0.2992	0.15	1.520
0.37	0.3267	0.14	1.649
0.36	0.3551	0.13	1.796
0.35	0.3845	0.12	1.965
0.34	0.4149	0.11	2.164
0.33	0.4465	0.10	2.401
0.32	0.4794	0.09	2.689
0.31	0.5138	0.08	3.046
0.30	0.5498	0.07	3.502
0.29	0.5877	0.06	4.107
0.28	0.6275	0.05	4.951
0.27	0.6696		

$\mu_1' = 0.49$			$\mu_1' = 0.48$			$\mu_1' = 0.47$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.05	0.2000	1.948	0.05	0.3995	4.942	0.05	0.5986	4.932
0.06	0.1667	1.105	0.06	0.3331	4.100	0.06	0.4990	4.092
0.07	0.1428	1.501	0.07	0.2854	3.496	0.07	0.4275	3.489
0.08	0.1250	1.044	0.08	0.2498	3.041	0.08	0.3743	3.035
0.09	0.1111	2.688	0.09	0.2221	2.684	0.09	0.3326	2.679
0.10	0.1000	2.490	0.10	0.1999	2.397	0.10	0.2995	2.393
0.11	0.0909	2.163	0.11	0.1818	2.161	0.11	0.2723	2.156
0.12	0.0834	1.965	0.12	0.1667	1.962	0.12	0.2497	1.958
0.13	0.0770	1.795	0.13	0.1539	1.793	0.13	0.2306	1.789
0.14	0.0716	1.648	0.14	0.1430	1.646	0.14	0.2142	1.643
0.15	0.0668	1.520	0.15	0.1335	1.518	0.15	0.2001	1.515
0.16	0.0626	1.406	0.16	0.1253	1.404	0.16	0.1877	1.401
0.17	0.0591	1.305	0.17	0.1180	1.303	0.17	0.1768	1.301
0.18	0.0558	1.214	0.18	0.1115	1.212	0.18	0.1672	1.210
0.19	0.0529	1.132	0.19	0.1058	1.130	0.19	0.1585	1.128
0.20	0.0503	1.057	0.20	0.1006	1.055	0.20	0.1508	1.053
0.21	0.0480	0.9882	0.21	0.0960	0.9869	0.21	0.1438	0.9847
0.22	0.0459	0.9249	0.22	0.0917	0.9237	0.22	0.1375	0.9217
0.23	0.0440	0.8665	0.23	0.0879	0.8653	0.23	0.1317	0.8634
0.24	0.0422	0.8121	0.24	0.0844	0.8110	0.24	0.1265	0.8092
0.25	0.0406	0.7615	0.25	0.0812	0.7604	0.25	0.1217	0.7586
0.26	0.0392	0.7140	0.26	0.0783	0.7130	0.26	0.1173	0.7112
0.27	0.0378	0.6693	0.27	0.0756	0.6684	0.27	0.1133	0.6667
0.28	0.0366	0.6272	0.28	0.0731	0.6263	0.28	0.1096	0.6247
0.29	0.0354	0.5874	0.29	0.0708	0.5865	0.29	0.1062	0.5850
0.30	0.0343	0.5495	0.30	0.0687	0.5487	0.30	0.1030	0.5472
0.31	0.0334	0.5135	0.31	0.0667	0.5127	0.31	0.1001	0.5113
0.32	0.0325	0.4791	0.32	0.0650	0.4783	0.32	0.0974	0.4769
0.33	0.0317	0.4462	0.33	0.0633	0.4454	0.33	0.0949	0.4441
0.34	0.0309	0.4146	0.34	0.0617	0.4138	0.34	0.0926	0.4126
0.35	0.0302	0.3842	0.35	0.0603	0.3835	0.35	0.0904	0.3822
0.36	0.0295	0.3549	0.36	0.0590	0.3541	0.36	0.0884	0.3529
0.37	0.0289	0.3265	0.37	0.0578	0.3257	0.37	0.0866	0.3245
0.38	0.0283	0.2989	0.38	0.0567	0.2982	0.38	0.0849	0.2970
0.39	0.0278	0.2721	0.39	0.0556	0.2714	0.39	0.0834	0.2702
0.40	0.0274	0.2459	0.40	0.0547	0.2452	0.40	0.0820	0.2441
0.41	0.0269	0.2203	0.41	0.0539	0.2196	0.41	0.0808	0.2185
0.42	0.0266	0.1952	0.42	0.0531	0.1945	0.42	0.0796	0.1933
0.43	0.0262	0.1704	0.43	0.0524	0.1697	0.43	0.0786	0.1686
0.44	0.0259	0.1459	0.44	0.0519	0.1453	0.44	0.0778	0.1441
0.45	0.0257	0.1217	0.45	0.0513	0.1210	0.45	0.0770	0.1198
0.46	0.0255	0.0975	0.46	0.0509	0.0968	0.46	0.0764	0.0957
0.47	0.0253	0.0734	0.47	0.0506	0.0726	0.47	0.0759	0.0715
0.48	0.0252	0.0491	0.48	0.0503	0.0484	0.48	0.0755	0.0472
0.49	0.0251	0.0246	0.49	0.0502	0.0239	0.49	0.0753	0.0226



$\mu_1' = 0.46$			$\mu_1' = 0.45$			$\mu_1' = 0.44$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.05	0.7967	4.513	0.05	0.9937	4.901	0.05	1.189	4.879
0.06	0.6639	4.081	0.06	0.8280	4.066	0.06	0.9908	4.048
0.07	0.5693	3.479	0.07	0.7098	3.467	0.07	0.8493	3.451
0.08	0.4982	3.026	0.08	0.6212	3.015	0.08	0.7434	3.002
0.09	0.4429	2.671	0.09	0.5523	2.662	0.09	0.6610	2.650
0.10	0.3986	2.386	0.10	0.4973	2.377	0.10	0.5951	2.366
0.11	0.3625	2.150	0.11	0.4521	2.143	0.11	0.5412	2.133
0.12	0.3324	1.953	0.12	0.4147	1.945	0.12	0.4963	1.937
0.13	0.3070	1.784	0.13	0.3829	1.777	0.13	0.4583	1.769
0.14	0.2852	1.638	0.14	0.3558	1.632	0.14	0.4259	1.625
0.15	0.2663	1.510	0.15	0.3323	1.505	0.15	0.3978	1.498
0.16	0.2499	1.397	0.16	0.3118	1.392	0.16	0.3733	1.386
0.17	0.2354	1.297	0.17	0.2937	1.292	0.17	0.3510	1.286
0.18	0.2225	1.206	0.18	0.2776	1.202	0.18	0.3325	1.196
0.19	0.2110	1.125	0.19	0.2633	1.120	0.19	0.3153	1.115
0.20	0.2008	1.050	0.20	0.2505	1.046	0.20	0.3000	1.041
0.21	0.1915	0.9817	0.21	0.2390	0.9779	0.21	0.2862	0.9732
0.22	0.1831	0.9189	0.22	0.2285	0.9152	0.22	0.2737	0.9108
0.23	0.1755	0.8607	0.23	0.2190	0.8572	0.23	0.2623	0.8530
0.24	0.1685	0.8066	0.24	0.2103	0.8033	0.24	0.2519	0.7993
0.25	0.1621	0.7562	0.25	0.2024	0.7530	0.25	0.2424	0.7491
0.26	0.1563	0.7089	0.26	0.1951	0.7059	0.26	0.2337	0.7021
0.27	0.1509	0.6645	0.27	0.1884	0.6615	0.27	0.2257	0.6580
0.28	0.1459	0.6226	0.28	0.1822	0.6197	0.28	0.2183	0.6163
0.29	0.1414	0.5829	0.29	0.1765	0.5802	0.29	0.2116	0.5769
0.30	0.1372	0.5452	0.30	0.1713	0.5426	0.30	0.2053	0.5394
0.31	0.1333	0.5093	0.31	0.1664	0.5068	0.31	0.1995	0.5037
0.32	0.1297	0.4750	0.32	0.1620	0.4726	0.32	0.1942	0.4696
0.33	0.1264	0.4422	0.33	0.1578	0.4399	0.33	0.1892	0.4370
0.34	0.1233	0.4107	0.34	0.1540	0.4084	0.34	0.1846	0.4056
0.35	0.1205	0.3804	0.35	0.1505	0.3782	0.35	0.1804	0.3754
0.36	0.1178	0.3512	0.36	0.1472	0.3489	0.36	0.1765	0.3462
0.37	0.1154	0.3228	0.37	0.1442	0.3207	0.37	0.1729	0.3180
0.38	0.1132	0.2953	0.38	0.1414	0.2932	0.38	0.1696	0.2906
0.39	0.1112	0.2686	0.39	0.1389	0.2665	0.39	0.1666	0.2639
0.40	0.1093	0.2424	0.40	0.1366	0.2403	0.40	0.1639	0.2378
0.41	0.1077	0.2168	0.41	0.1345	0.2148	0.41	0.1614	0.2122
0.42	0.1062	0.1917	0.42	0.1327	0.1897	0.42	0.1592	0.1871
0.43	0.1048	0.1670	0.43	0.1310	0.1649	0.43	0.1572	0.1624
0.44	0.1037	0.1425	0.44	0.1296	0.1404	0.44	0.1555	0.1379
0.45	0.1027	0.1182	0.45	0.1284	0.1162	0.45	0.1541	0.1136
0.46	0.1019	0.0940	0.46	0.1274	0.0919	0.46	0.1529	0.0894
0.47	0.1012	0.0698	0.47	0.1266	0.0677	0.47	0.1520	0.0651
0.48	0.1008	0.0455	0.48	0.1260	0.0433	0.48	0.1514	0.0407
0.49	0.1005	0.0209	0.49	0.1257	0.0187	0.49	0.1510	0.0160

$\mu_1' = 0.43$			$\mu_1' = 0.42$			$\mu_1' = 0.41$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.05	1.382	4.853	0.05	1.573	4.823	0.05	1.762	4.790
0.06	1.152	4.026	0.06	1.311	4.002	0.06	1.469	3.974
0.07	0.9877	3.433	0.07	1.124	3.412	0.07	1.259	3.388
0.08	0.8644	2.986	0.08	0.9842	2.968	0.08	1.102	2.947
0.09	0.7686	2.636	0.09	0.8751	2.620	0.09	0.9802	2.601
0.10	0.6921	2.354	0.10	0.7879	2.339	0.10	0.8827	2.323
0.11	0.6294	2.122	0.11	0.7166	2.108	0.11	0.8029	2.094
0.12	0.5772	1.926	0.12	0.6574	1.915	0.12	0.7366	1.901
0.13	0.5332	1.760	0.13	0.6072	1.749	0.13	0.6804	1.737
0.14	0.4954	1.616	0.14	0.5643	1.606	0.14	0.6323	1.594
0.15	0.4628	1.490	0.15	0.5271	1.480	0.15	0.5908	1.470
0.16	0.4342	1.378	0.16	0.4947	1.370	0.16	0.5545	1.360
0.17	0.4091	1.279	0.17	0.4662	1.271	0.17	0.5225	1.262
0.18	0.3869	1.190	0.18	0.4408	1.182	0.18	0.4942	1.173
0.19	0.3670	1.109	0.19	0.4182	1.102	0.19	0.4689	1.094
0.20	0.3491	1.035	0.20	0.3979	1.028	0.20	0.4462	1.021
0.21	0.3331	0.9677	0.21	0.3796	0.9612	0.21	0.4257	0.9540
0.22	0.3185	0.9055	0.22	0.3631	0.8994	0.22	0.4073	0.8925
0.23	0.3053	0.8479	0.23	0.3480	0.8422	0.23	0.3904	0.8356
0.24	0.2932	0.7945	0.24	0.3343	0.7890	0.24	0.3751	0.7827
0.25	0.2822	0.7445	0.25	0.3218	0.7393	0.25	0.3611	0.7333
0.26	0.2721	0.6978	0.26	0.3103	0.6927	0.26	0.3482	0.6870
0.27	0.2628	0.6538	0.27	0.2997	0.6489	0.27	0.3364	0.6434
0.28	0.2543	0.6123	0.28	0.2900	0.6076	0.28	0.3255	0.6023
0.29	0.2464	0.5729	0.29	0.2811	0.5685	0.29	0.3155	0.5633
0.30	0.2391	0.5356	0.30	0.2728	0.5312	0.30	0.3062	0.5263
0.31	0.2324	0.5000	0.31	0.2652	0.4958	0.31	0.2977	0.4910
0.32	0.2262	0.4660	0.32	0.2581	0.4619	0.32	0.2898	0.4573
0.33	0.2205	0.4335	0.33	0.2516	0.4295	0.33	0.2825	0.4250
0.34	0.2151	0.4022	0.34	0.2456	0.3983	0.34	0.2758	0.3939
0.35	0.2102	0.3721	0.35	0.2400	0.3683	0.35	0.2696	0.3640
0.36	0.2057	0.3430	0.36	0.2348	0.3393	0.36	0.2639	0.3351
0.37	0.2016	0.3148	0.37	0.2301	0.3112	0.37	0.2586	0.3070
0.38	0.1977	0.2875	0.38	0.2258	0.2839	0.38	0.2538	0.2798
0.39	0.1943	0.2608	0.39	0.2219	0.2572	0.39	0.2494	0.2532
0.40	0.1911	0.2347	0.40	0.2183	0.2312	0.40	0.2454	0.2272
0.41	0.1883	0.2092	0.41	0.2151	0.2058	0.41	0.2419	0.2018
0.42	0.1857	0.1842	0.42	0.2122	0.1807	0.42	0.2387	0.1767
0.43	0.1834	0.1594	0.43	0.2096	0.1559	0.43	0.2359	0.1520
0.44	0.1815	0.1345	0.44	0.2075	0.1314	0.44	0.2335	0.1275
0.45	0.1798	0.1106	0.45	0.2056	0.1071	0.45	0.2315	0.1031
0.46	0.1785	0.0863	0.46	0.2042	0.0828	0.46	0.2298	0.0787
0.47	0.1775	0.0620	0.47	0.2030	0.0584	0.47	0.2286	0.0543
0.48	0.1768	0.0375	0.48	0.2023	0.0338	0.48	0.2279	0.0296
0.49	0.1764	0.0127	0.49	0.2019	0.0090	0.49	0.2276	0.0046

$\mu_1' = 0.40$			$\mu_1' = 0.39$			$\mu_1' = 0.38$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	2.434	5.962	0.04	2.662	5.910	0.04	2.885	5.852
0.05	1.948	4.752	0.05	2.130	4.711	0.05	2.309	4.565
0.06	1.624	3.943	0.06	1.776	3.908	0.06	1.925	3.870
0.07	1.392	3.362	0.07	1.523	3.332	0.07	1.651	3.300
0.08	1.219	2.924	0.08	1.333	2.898	0.08	1.446	2.870
0.09	1.084	2.581	0.09	1.186	2.558	0.09	1.286	2.533
0.10	0.9761	2.305	0.10	1.068	2.285	0.10	1.158	2.262
0.11	0.8881	2.077	0.11	0.9717	2.059	0.11	1.054	2.039
0.12	0.8147	1.886	0.12	0.8916	1.869	0.12	0.9672	1.851
0.13	0.7527	1.723	0.13	0.8238	1.708	0.13	0.8930	1.691
0.14	0.6996	1.582	0.14	0.7659	1.568	0.14	0.8311	1.552
0.15	0.6537	1.458	0.15	0.7157	1.445	0.15	0.7767	1.431
0.16	0.6136	1.349	0.16	0.6719	1.337	0.16	0.7293	1.323
0.17	0.5783	1.251	0.17	0.6333	1.240	0.17	0.6875	1.228
0.18	0.5470	1.164	0.18	0.5991	1.153	0.18	0.6505	1.142
0.19	0.5190	1.084	0.19	0.5686	1.074	0.19	0.6174	1.064
0.20	0.4940	1.012	0.20	0.5412	1.003	0.20	0.5878	0.9924
0.21	0.4714	0.9459	0.21	0.5165	0.9370	0.21	0.5611	0.9272
0.22	0.4510	0.8848	0.22	0.4942	0.8763	0.22	0.5370	0.8671
0.23	0.4324	0.8283	0.23	0.4739	0.8202	0.23	0.5150	0.8114
0.24	0.4155	0.7757	0.24	0.4554	0.7680	0.24	0.4950	0.7595
0.25	0.4000	0.7266	0.25	0.4385	0.7192	0.25	0.4767	0.7112
0.26	0.3858	0.6806	0.26	0.4230	0.6735	0.26	0.4599	0.6658
0.27	0.3728	0.6373	0.27	0.4088	0.6305	0.27	0.4445	0.6230
0.28	0.3608	0.5964	0.28	0.3957	0.5898	0.28	0.4303	0.5826
0.29	0.3497	0.5576	0.29	0.3836	0.5513	0.29	0.4173	0.5444
0.30	0.3395	0.5208	0.30	0.3725	0.5147	0.30	0.4052	0.5080
0.31	0.3301	0.4856	0.31	0.3622	0.4797	0.31	0.3942	0.4732
0.32	0.3214	0.4521	0.32	0.3528	0.4463	0.32	0.3839	0.4400
0.33	0.3133	0.4199	0.33	0.3440	0.4143	0.33	0.3744	0.4082
0.34	0.3059	0.3890	0.34	0.3359	0.3835	0.34	0.3657	0.3775
0.35	0.2991	0.3592	0.35	0.3285	0.3538	0.35	0.3577	0.3480
0.36	0.2928	0.3303	0.36	0.3216	0.3251	0.36	0.3503	0.3193
0.37	0.2870	0.3024	0.37	0.3153	0.2972	0.37	0.3435	0.2916
0.38	0.2817	0.2752	0.38	0.3096	0.2701	0.38	0.3373	0.2645
0.39	0.2769	0.2487	0.39	0.3043	0.2437	0.39	0.3317	0.2382
0.40	0.2725	0.2228	0.40	0.2996	0.2178	0.40	0.3266	0.2123
0.41	0.2686	0.1973	0.41	0.2954	0.1924	0.41	0.3221	0.1869
0.42	0.2651	0.1723	0.42	0.2916	0.1673	0.42	0.3181	0.1619
0.43	0.2621	0.1476	0.43	0.2884	0.1426	0.43	0.3146	0.1372
0.44	0.2595	0.1230	0.44	0.2856	0.1180	0.44	0.3117	0.1126
0.45	0.2573	0.0986	0.45	0.2833	0.0936	0.45	0.3093	0.0880
0.46	0.2556	0.0742	0.46	0.2815	0.0691	0.46	0.3075	0.0635
0.47	0.2544	0.0496	0.47	0.2802	0.0445	0.47	0.3062	0.0387
0.48	0.2536	0.0249	0.48	0.2795	0.0196	0.48	0.3056	0.0137

$\mu_1' = 0.37$			$\mu_1' = 0.36$			$\mu_1' = 0.35$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	3.104	5.790	0.04	3.317	5.723	0.04	3.525	5.651
0.05	2.484	4.616	0.05	2.655	4.562	0.05	2.822	4.505
0.06	2.072	3.830	0.06	2.214	3.785	0.06	2.353	3.737
0.07	1.777	3.265	0.07	1.899	3.227	0.07	2.019	3.187
0.08	1.556	2.839	0.08	1.663	2.807	0.08	1.768	2.771
0.09	1.384	2.507	0.09	1.480	2.478	0.09	1.574	2.446
0.10	1.247	2.238	0.10	1.334	2.212	0.10	1.416	2.185
0.11	1.135	2.017	0.11	1.214	1.994	0.11	1.291	1.969
0.12	1.041	1.831	0.12	1.114	1.810	0.12	1.185	1.787
0.13	0.9626	1.673	0.13	1.030	1.653	0.13	1.096	1.632
0.14	0.8952	1.536	0.14	0.9579	1.518	0.14	1.019	1.498
0.15	0.8368	1.415	0.15	0.8956	1.399	0.15	0.9533	1.381
0.16	0.7857	1.309	0.16	0.8412	1.294	0.16	0.8955	1.277
0.17	0.7409	1.214	0.17	0.7933	1.200	0.17	0.8447	1.184
0.18	0.7011	1.129	0.18	0.7508	1.115	0.18	0.7996	1.101
0.19	0.6656	1.052	0.19	0.7130	1.039	0.19	0.7594	1.025
0.20	0.6338	0.9812	0.20	0.6790	0.9690	0.20	0.7234	0.9560
0.21	0.6051	0.9165	0.21	0.6484	0.9050	0.21	0.6910	0.8927
0.22	0.5791	0.8569	0.22	0.6207	0.8461	0.22	0.6616	0.8344
0.23	0.5555	0.8017	0.23	0.5955	0.7914	0.23	0.6348	0.7802
0.24	0.5340	0.7504	0.24	0.5726	0.7405	0.24	0.6106	0.7298
0.25	0.5144	0.7024	0.25	0.5516	0.6929	0.25	0.5884	0.6827
0.26	0.4964	0.6573	0.26	0.5324	0.6482	0.26	0.5680	0.6385
0.27	0.4798	0.6149	0.27	0.5148	0.6062	0.27	0.5493	0.5968
0.28	0.4646	0.5749	0.28	0.4986	0.5664	0.28	0.5321	0.5574
0.29	0.4506	0.5368	0.29	0.4837	0.5287	0.29	0.5163	0.5199
0.30	0.4377	0.5007	0.30	0.4699	0.4928	0.30	0.5018	0.4843
0.31	0.4258	0.4662	0.31	0.4572	0.4585	0.31	0.4883	0.4503
0.32	0.4148	0.4332	0.32	0.4455	0.4257	0.32	0.4760	0.4177
0.33	0.4047	0.4015	0.33	0.4347	0.3942	0.33	0.4645	0.3864
0.34	0.3953	0.3710	0.34	0.4248	0.3639	0.34	0.4540	0.3563
0.35	0.3867	0.3416	0.35	0.4156	0.3346	0.35	0.4444	0.3272
0.36	0.3788	0.3131	0.36	0.4072	0.3063	0.36	0.4355	0.2989
0.37	0.3716	0.2854	0.37	0.3996	0.2787	0.37	0.4275	0.2714
0.38	0.3650	0.2584	0.38	0.3926	0.2518	0.38	0.4201	0.2447
0.39	0.3590	0.2321	0.39	0.3863	0.2256	0.39	0.4135	0.2185
0.40	0.3536	0.2063	0.40	0.3806	0.1998	0.40	0.4076	0.1928
0.41	0.3488	0.1810	0.41	0.3756	0.1745	0.41	0.4023	0.1675
0.42	0.3446	0.1560	0.42	0.3712	0.1495	0.42	0.3978	0.1424
0.43	0.3410	0.1312	0.43	0.3674	0.1246	0.43	0.3939	0.1176
0.44	0.3379	0.1065	0.44	0.3643	0.1000	0.44	0.3907	0.0928
0.45	0.3355	0.0819	0.45	0.3618	0.0753	0.45	0.3882	0.0680
0.46	0.3336	0.0572	0.46	0.3600	0.0505	0.46	0.3865	0.0431
0.47	0.3324	0.0324	0.47	0.3588	0.0254	0.47	0.3855	0.0178
0.48	0.3319	0.0072						

$\mu_1' = 0.34$			$\mu_1' = 0.33$			$\mu_1' = 0.32$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	3.726	5.574	0.04	3.921	5.493	0.04	4.108	5.406
0.05	2.983	4.444	0.05	3.139	4.378	0.05	3.289	4.309
0.06	2.488	3.687	0.06	2.619	3.633	0.06	2.744	3.575
0.07	2.135	3.144	0.07	2.247	3.097	0.07	2.356	3.049
0.08	1.870	2.734	0.08	1.969	2.694	0.08	2.064	2.651
0.09	1.665	2.413	0.09	1.753	2.378	0.09	1.838	2.340
0.10	1.500	2.155	0.10	1.580	2.123	0.10	1.657	2.090
0.11	1.366	1.942	0.11	1.439	1.913	0.11	1.510	1.883
0.12	1.254	1.763	0.12	1.322	1.737	0.12	1.387	1.709
0.13	1.160	1.610	0.13	1.223	1.586	0.13	1.283	1.561
0.14	1.079	1.478	0.14	1.138	1.456	0.14	1.195	1.432
0.15	1.010	1.362	0.15	1.064	1.341	0.15	1.118	1.320
0.16	0.9486	1.259	0.16	1.000	1.240	0.16	1.051	1.220
0.17	0.8950	1.167	0.17	0.9441	1.150	0.17	0.9921	1.131
0.18	0.8474	1.085	0.18	0.8942	1.068	0.18	0.9399	1.051
0.19	0.8051	1.010	0.19	0.8497	0.9947	0.19	0.8933	0.9782
0.20	0.7670	0.9422	0.20	0.8097	0.9274	0.20	0.8515	0.9117
0.21	0.7328	0.8796	0.21	0.7738	0.8656	0.21	0.8140	0.8508
0.22	0.7018	0.8218	0.22	0.7412	0.8086	0.22	0.7799	0.7945
0.23	0.6736	0.7684	0.23	0.7117	0.7557	0.23	0.7491	0.7422
0.24	0.6480	0.7185	0.24	0.6848	0.7064	0.24	0.7209	0.6935
0.25	0.6245	0.6718	0.25	0.6602	0.6602	0.25	0.6952	0.6479
0.26	0.6031	0.6280	0.26	0.6377	0.6169	0.26	0.6717	0.6051
0.27	0.5834	0.5867	0.27	0.6170	0.5760	0.27	0.6501	0.5646
0.28	0.5653	0.5477	0.28	0.5980	0.5374	0.28	0.6303	0.5264
0.29	0.5486	0.5106	0.29	0.5805	0.5006	0.29	0.6121	0.4900
0.30	0.5333	0.4752	0.30	0.5645	0.4655	0.30	0.5953	0.4553
0.31	0.5192	0.4415	0.31	0.5497	0.4321	0.31	0.5799	0.4221
0.32	0.5061	0.4092	0.32	0.5360	0.4000	0.32	0.5657	0.3903
0.33	0.4941	0.3781	0.33	0.5235	0.3691	0.33	0.5526	0.3596
0.34	0.4831	0.3481	0.34	0.5119	0.3394	0.34	0.5406	0.3301
0.35	0.4730	0.3191	0.35	0.5014	0.3106	0.35	0.5296	0.3014
0.36	0.4637	0.2910	0.36	0.4917	0.2826	0.36	0.5196	0.2736
0.37	0.4552	0.2637	0.37	0.4829	0.2553	0.37	0.5105	0.2464
0.38	0.4476	0.2370	0.38	0.4750	0.2288	0.38	0.5023	0.2199
0.39	0.4407	0.2109	0.39	0.4678	0.2027	0.39	0.4950	0.1939
0.40	0.4345	0.1852	0.40	0.4615	0.1770	0.40	0.4885	0.1683
0.41	0.4291	0.1599	0.41	0.4560	0.1517	0.41	0.4829	0.1429
0.42	0.4244	0.1348	0.42	0.4512	0.1266	0.42	0.4781	0.1178
0.43	0.4205	0.1099	0.43	0.4472	0.1016	0.43	0.4742	0.0927
0.44	0.4173	0.0850	0.44	0.4441	0.0767	0.44	0.4712	0.0676
0.45	0.4149	0.0601	0.45	0.4418	0.0516	0.45	0.4691	0.0423
0.46	0.4133	0.0350	0.46	0.4404	0.0263	0.46	0.4679	0.0168
0.47	0.4125	0.0095	0.47	0.4399	0.0006			

$\mu_1' = 0.31$			$\mu_1' = 0.30$			$\mu_1' = 0.29$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	4.287	5.314	0.04	4.459	5.218	0.04	4.621	5.116
0.05	3.434	4.236	0.05	3.571	4.159	0.05	3.703	4.078
0.06	2.865	3.515	0.06	2.981	3.451	0.06	3.091	3.384
0.07	2.460	2.997	0.07	2.560	2.943	0.07	2.655	2.885
0.08	2.156	2.606	0.08	2.244	2.559	0.08	2.328	2.510
0.09	1.920	2.301	0.09	1.999	2.259	0.09	2.075	2.215
0.10	1.732	2.054	0.10	1.804	2.017	0.10	1.872	1.978
0.11	1.578	1.851	0.11	1.644	1.817	0.11	1.707	1.782
0.12	1.450	1.680	0.12	1.511	1.650	0.12	1.570	1.618
0.13	1.342	1.534	0.13	1.399	1.506	0.13	1.453	1.477
0.14	1.250	1.408	0.14	1.303	1.382	0.14	1.354	1.355
0.15	1.170	1.297	0.15	1.220	1.273	0.15	1.269	1.248
0.16	1.100	1.199	0.16	1.148	1.177	0.16	1.194	1.153
0.17	1.039	1.111	0.17	1.084	1.090	0.17	1.128	1.069
0.18	0.9843	1.032	0.18	1.028	1.013	0.18	1.070	0.9923
0.19	0.9359	0.9607	0.19	0.9773	0.9423	0.19	1.018	0.9230
0.20	0.8924	0.8952	0.20	0.9322	0.8778	0.20	0.9710	0.8596
0.21	0.8533	0.8351	0.21	0.8916	0.8186	0.21	0.9290	0.8014
0.22	0.8178	0.7796	0.22	0.8549	0.7639	0.22	0.8910	0.7475
0.23	0.7857	0.7280	0.23	0.8215	0.7131	0.23	0.8566	0.6974
0.24	0.7564	0.6800	0.24	0.7912	0.6657	0.24	0.8252	0.6507
0.25	0.7297	0.6350	0.25	0.7635	0.6213	0.25	0.7966	0.6068
0.26	0.7052	0.5926	0.26	0.7381	0.5795	0.26	0.7705	0.5656
0.27	0.6828	0.5526	0.27	0.7149	0.5400	0.27	0.7464	0.5266
0.28	0.6622	0.5148	0.28	0.6935	0.5025	0.28	0.7244	0.4896
0.29	0.6432	0.4787	0.29	0.6740	0.4669	0.29	0.7042	0.4544
0.30	0.6258	0.4444	0.30	0.6559	0.4329	0.30	0.6857	0.4207
0.31	0.6098	0.4115	0.31	0.6393	0.4003	0.31	0.6686	0.3885
0.32	0.5950	0.3799	0.32	0.6241	0.3690	0.32	0.6529	0.3575
0.33	0.5815	0.3495	0.33	0.6102	0.3388	0.33	0.6386	0.3275
0.34	0.5691	0.3202	0.34	0.5974	0.3097	0.34	0.6255	0.2985
0.35	0.5578	0.2917	0.35	0.5857	0.2813	0.35	0.6136	0.2704
0.36	0.5474	0.2640	0.36	0.5751	0.2538	0.36	0.6028	0.2430
0.37	0.5381	0.2370	0.37	0.5656	0.2269	0.37	0.5931	0.2161
0.38	0.5297	0.2105	0.38	0.5570	0.2005	0.38	0.5845	0.1898
0.39	0.5222	0.1845	0.39	0.5495	0.1745	0.39	0.5768	0.1639
0.40	0.5156	0.1589	0.40	0.5429	0.1489	0.40	0.5702	0.1382
0.41	0.5100	0.1335	0.41	0.5372	0.1235	0.41	0.5647	0.1127
0.42	0.5052	0.1083	0.42	0.5326	0.0982	0.42	0.5602	0.0872
0.43	0.5014	0.0831	0.43	0.5289	0.0728	0.43	0.5568	0.0617
0.44	0.4986	0.0578	0.44	0.5263	0.0473	0.44	0.5546	0.0360
0.45	0.4967	0.0324	0.45	0.5248	0.0216	0.45	0.5535	0.0099
0.46	0.4959	0.0065						

$\mu_1' = 0.28$			$\mu_1' = 0.27$			$\mu_1' = 0.26$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	4.774	5.009	0.04	4.918	4.898	0.04	5.051	4.781
0.05	3.826	3.994	0.05	3.942	3.905	0.05	4.050	3.812
0.06	3.195	3.314	0.06	3.292	3.240	0.06	3.383	3.163
0.07	2.745	2.825	0.07	2.829	2.763	0.07	2.909	2.698
0.08	2.408	2.458	0.08	2.483	2.403	0.08	2.553	2.346
0.09	2.146	2.169	0.09	2.214	2.121	0.09	2.278	2.072
0.10	1.938	1.937	0.10	1.999	1.894	0.10	2.058	1.850
0.11	1.767	1.745	0.11	1.824	1.707	0.11	1.878	1.666
0.12	1.625	1.584	0.12	1.679	1.549	0.12	1.729	1.512
0.13	1.506	1.446	0.13	1.556	1.414	0.13	1.603	1.380
0.14	1.404	1.327	0.14	1.451	1.297	0.14	1.496	1.266
0.15	1.315	1.222	0.15	1.360	1.194	0.15	1.403	1.166
0.16	1.238	1.129	0.16	1.281	1.103	0.16	1.322	1.077
0.17	1.170	1.046	0.17	1.211	1.022	0.17	1.250	0.9969
0.18	1.110	0.9708	0.18	1.149	0.9484	0.18	1.187	0.9250
0.19	1.057	0.9027	0.19	1.094	0.8816	0.19	1.131	0.8595
0.20	1.009	0.8405	0.20	1.045	0.8205	0.20	1.080	0.7996
0.21	0.9654	0.7832	0.21	1.001	0.7642	0.21	1.035	0.7444
0.22	0.9263	0.7302	0.22	0.9606	0.7122	0.22	0.9940	0.6933
0.23	0.8909	0.6809	0.23	0.9242	0.6637	0.23	0.9568	0.6457
0.24	0.8586	0.6349	0.24	0.8911	0.6184	0.24	0.9229	0.6012
0.25	0.8291	0.5918	0.25	0.8609	0.5759	0.25	0.8920	0.5594
0.26	0.8022	0.5511	0.26	0.8333	0.5358	0.26	0.8638	0.5199
0.27	0.7775	0.5126	0.27	0.8080	0.4979	0.27	0.8379	0.4824
0.28	0.7549	0.4760	0.28	0.7848	0.4618	0.28	0.8143	0.4469
0.29	0.7341	0.4412	0.29	0.7636	0.4274	0.29	0.7926	0.4129
0.30	0.7150	0.4079	0.30	0.7441	0.3945	0.30	0.7728	0.3804
0.31	0.6976	0.3760	0.31	0.7262	0.3629	0.31	0.7546	0.3491
0.32	0.6815	0.3453	0.32	0.7099	0.3324	0.32	0.7380	0.3189
0.33	0.6669	0.3156	0.33	0.6950	0.3030	0.33	0.7229	0.2897
0.34	0.6535	0.2868	0.34	0.6814	0.2744	0.34	0.7092	0.2613
0.35	0.6414	0.2588	0.35	0.6691	0.2466	0.35	0.6968	0.2336
0.36	0.6304	0.2315	0.36	0.6581	0.2194	0.36	0.6858	0.2065
0.37	0.6206	0.2047	0.37	0.6482	0.1927	0.37	0.6760	0.1798
0.38	0.6119	0.1784	0.38	0.6396	0.1664	0.38	0.6674	0.1535
0.39	0.6043	0.1525	0.39	0.6321	0.1404	0.39	0.6601	0.1275
0.40	0.5979	0.1268	0.40	0.6258	0.1146	0.40	0.6541	0.1016
0.41	0.5925	0.1012	0.41	0.6207	0.0888	0.41	0.6493	0.0756
0.42	0.5883	0.0756	0.42	0.6168	0.0630	0.42	0.6459	0.0495
0.43	0.5852	0.0498	0.43	0.6142	0.0370	0.43	0.6439	0.0231
0.44	0.5834	0.0238	0.44	0.6129	0.0106			

$\mu_1' = 0.25$			$\mu_1' = 0.24$			$\mu_1' = 0.23$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.04	5.174	4.661	0.04	5.283	4.534	0.03	7.157	5.865
0.05	4.149	3.716	0.05	4.239	3.616	0.04	5.381	4.403
0.06	3.468	3.084	0.06	3.544	3.001	0.05	4.319	3.512
0.07	2.982	2.630	0.07	3.049	2.559	0.06	3.612	2.915
0.08	2.619	2.287	0.08	2.679	2.226	0.07	3.110	2.486
0.09	2.337	2.019	0.09	2.392	1.965	0.08	2.734	2.163
						0.09	2.442	1.909
0.10	2.112	1.803	0.10	2.163	1.755	0.10	2.210	1.705
0.11	1.929	1.624	0.11	1.977	1.581	0.11	2.020	1.536
0.12	1.777	1.474	0.12	1.821	1.435	0.12	1.863	1.394
0.13	1.648	1.346	0.13	1.691	1.309	0.13	1.730	1.272
0.14	1.539	1.234	0.14	1.579	1.201	0.14	1.617	1.166
0.15	1.444	1.136	0.15	1.482	1.105	0.15	1.519	1.073
0.16	1.361	1.049	0.16	1.398	1.020	0.16	1.433	0.9903
0.17	1.288	0.9710	0.17	1.324	0.9441	0.17	1.358	0.9162
0.18	1.224	0.9007	0.18	1.258	0.8753	0.18	1.292	0.8491
0.19	1.166	0.8366	0.19	1.200	0.8127	0.19	1.232	0.7880
0.20	1.115	0.7779	0.20	1.148	0.7553	0.20	1.179	0.7318
0.21	1.068	0.7238	0.21	1.100	0.7023	0.21	1.131	0.6800
0.22	1.026	0.6736	0.22	1.058	0.6532	0.22	1.088	0.6319
0.23	0.9885	0.6269	0.23	1.019	0.6074	0.23	1.049	0.5870
0.24	0.9539	0.5832	0.24	0.9841	0.5645	0.24	1.014	0.5449
0.25	0.9224	0.5421	0.25	0.9521	0.5240	0.25	0.9812	0.5052
0.26	0.8937	0.5032	0.26	0.9230	0.4858	0.26	0.9516	0.4676
0.27	0.8673	0.4663	0.27	0.8962	0.4495	0.27	0.9247	0.4319
0.28	0.8433	0.4312	0.28	0.8719	0.4149	0.28	0.9001	0.3978
0.29	0.8213	0.3977	0.29	0.8496	0.3818	0.29	0.8776	0.3651
0.30	0.8011	0.3656	0.30	0.8292	0.3500	0.30	0.8571	0.3337
0.31	0.7827	0.3346	0.31	0.8107	0.3194	0.31	0.8384	0.3034
0.32	0.7659	0.3047	0.32	0.7938	0.2897	0.32	0.8215	0.2740
0.33	0.7507	0.2757	0.33	0.7785	0.2609	0.33	0.8063	0.2454
0.34	0.7369	0.2475	0.34	0.7647	0.2329	0.34	0.7926	0.2175
0.35	0.7246	0.2199	0.35	0.7524	0.2054	0.35	0.7805	0.1901
0.36	0.7136	0.1928	0.36	0.7416	0.1784	0.36	0.7699	0.1631
0.37	0.7039	0.1662	0.37	0.7321	0.1518	0.37	0.7608	0.1363
0.38	0.6956	0.1399	0.38	0.7241	0.1253	0.38	0.7532	0.1098
0.39	0.6886	0.1137	0.39	0.7175	0.9901	0.39	0.7472	0.0833
0.40	0.6829	0.0876	0.40	0.7124	0.0727	0.40	0.7427	0.0566
0.41	0.6786	0.0614	0.41	0.7088	0.0462	0.41	0.7399	0.0297
0.42	0.6759	0.0350	0.42	0.7067	0.0193	0.42	0.7388	0.0023
0.43	0.6746	0.0082						



$\mu_1' = 0.22$			$\mu_1' = 0.21$			$\mu_1' = 0.20$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	7.267	5.703	0.03	7.359	5.515	0.03	7.431	5.320
0.04	5.466	4.268	0.04	5.537	4.127	0.04	5.594	3.982
0.05	4.389	3.404	0.05	4.448	3.292	0.05	4.496	3.176
0.06	3.673	2.825	0.06	3.725	2.733	0.06	3.767	2.637
0.07	3.163	2.410	0.07	3.210	2.332	0.07	3.249	2.250
0.08	2.783	2.097	0.08	2.825	2.029	0.08	2.862	1.958
0.09	2.487	1.851	0.09	2.528	1.791	0.09	2.324	1.544
0.10	2.252	1.653	0.10	2.290	1.600	0.10	2.324	1.545
0.11	2.061	1.489	0.11	2.097	1.441	0.11	2.129	1.391
0.12	1.901	1.351	0.12	1.936	1.308	0.12	1.968	1.262
0.13	1.767	1.233	0.13	1.801	1.193	0.13	1.831	1.152
0.14	1.652	1.130	0.14	1.685	1.093	0.14	1.715	1.055
0.15	1.553	1.040	0.15	1.585	1.006	0.15	1.615	0.9702
0.16	1.467	0.9595	0.16	1.498	0.9275	0.16	1.527	0.8944
0.17	1.391	0.8872	0.17	1.421	0.8573	0.17	1.450	0.8264
0.18	1.323	0.8219	0.18	1.353	0.7937	0.18	1.382	0.7646
0.19	1.263	0.7623	0.19	1.293	0.7357	0.19	1.321	0.7082
0.20	1.210	0.7075	0.20	1.239	0.6823	0.20	1.267	0.6561
0.21	1.161	0.6569	0.21	1.190	0.6329	0.21	1.218	0.6080
0.22	1.118	0.6099	0.22	1.146	0.5869	0.22	1.174	0.5631
0.23	1.078	0.5659	0.23	1.106	0.5439	0.23	1.134	0.5211
0.24	1.042	0.5246	0.24	1.070	0.5034	0.24	1.097	0.4814
0.25	1.010	0.4856	0.25	1.037	0.4652	0.25	1.064	0.4440
0.26	0.9798	0.4486	0.26	1.007	0.4289	0.26	1.035	0.4083
0.27	0.9526	0.4135	0.27	0.9802	0.3943	0.27	1.007	0.3743
0.28	0.9279	0.3799	0.28	0.9553	0.3612	0.28	0.9826	0.3417
0.29	0.9053	0.3477	0.29	0.9328	0.3294	0.29	0.9601	0.3102
0.30	0.8847	0.3166	0.30	0.9122	0.2987	0.30	0.9398	0.2799
0.31	0.8661	0.2866	0.31	0.8938	0.2689	0.31	0.9215	0.2503
0.32	0.8493	0.2574	0.32	0.8771	0.2400	0.32	0.9052	0.2215
0.33	0.8342	0.2290	0.33	0.8623	0.2117	0.33	0.8907	0.1933
0.34	0.8207	0.2011	0.34	0.8492	0.1839	0.34	0.8781	0.1655
0.35	0.8089	0.1738	0.35	0.8378	0.1565	0.35	0.8673	0.1380
0.36	0.7987	0.1468	0.36	0.8281	0.1294	0.36	0.8583	0.1107
0.37	0.7901	0.1199	0.37	0.8201	0.1023	0.37	0.8511	0.0835
0.38	0.7831	0.0931	0.38	0.8139	0.0753	0.38	0.8459	0.0560
0.39	0.7777	0.0663	0.39	0.8095	0.0481	0.39	0.8427	0.0282
0.40	0.7741	0.0393	0.40	0.8070	0.0205			
0.41	0.7724	0.0118						

$\mu_1' = 0.19$			$\mu_1' = 0.18$			$\mu_1' = 0.17$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	7.482	5.118	0.03	7.510	4.910	0.03	7.515	4.696
0.04	5.636	3.831	0.04	5.661	3.677	0.04	5.669	3.517
0.05	4.532	3.057	0.05	4.556	2.934	0.05	4.567	2.808
0.06	3.801	2.539	0.06	3.824	2.437	0.06	3.837	2.333
0.07	3.281	2.167	0.07	3.304	2.081	0.07	3.319	1.992
0.08	2.892	1.886	0.08	2.916	1.811	0.08	2.932	1.734
0.09	2.592	1.666	0.09	2.616	1.600	0.09	2.633	1.532
0.10	2.353	1.488	0.10	2.377	1.429	0.10	2.396	1.369
0.11	2.158	1.340	0.11	2.182	1.288	0.11	2.202	1.233
0.12	1.996	1.216	0.12	2.020	1.168	0.12	2.041	1.119
0.13	1.859	1.109	0.13	1.884	1.065	0.13	1.905	1.020
0.14	1.743	1.016	0.14	1.767	0.9753	0.14	1.790	0.9337
0.15	1.642	0.9337	0.15	1.667	0.8961	0.15	1.690	0.8574
0.16	1.554	0.8604	0.16	1.579	0.8253	0.16	1.602	0.7892
0.17	1.477	0.7945	0.17	1.502	0.7615	0.17	1.526	0.7275
0.18	1.409	0.7345	0.18	1.434	0.7035	0.18	1.458	0.6714
0.19	1.348	0.6797	0.19	1.373	0.6503	0.19	1.397	0.6199
0.20	1.293	0.6231	0.20	1.319	0.6012	0.20	1.343	0.5722
0.21	1.244	0.5522	0.21	1.270	0.5555	0.21	1.295	0.5278
0.22	1.200	0.5384	0.22	1.226	0.5128	0.22	1.251	0.4862
0.23	1.160	0.4973	0.23	1.186	0.4727	0.23	1.211	0.4471
0.24	1.124	0.4586	0.24	1.150	0.4348	0.24	1.176	0.4100
0.25	1.091	0.4218	0.25	1.117	0.3987	0.25	1.143	0.3747
0.26	1.061	0.3868	0.26	1.088	0.3644	0.26	1.114	0.3409
0.27	1.034	0.3533	0.27	1.061	0.3314	0.27	1.088	0.3084
0.28	1.010	0.3212	0.28	1.037	0.2996	0.28	1.064	0.2771
0.29	0.9874	0.2901	0.29	1.015	0.2689	0.29	1.042	0.2466
0.30	0.9674	0.2600	0.30	0.9953	0.2391	0.30	1.024	0.2169
0.31	0.9495	0.2307	0.31	0.9779	0.2099	0.31	1.007	0.1878
0.32	0.9336	0.2020	0.32	0.9626	0.1813	0.32	0.9925	0.1592
0.33	0.9197	0.1738	0.33	0.9495	0.1531	0.33	0.9803	0.1308
0.34	0.9078	0.1460	0.34	0.9384	0.1250	0.34	0.9704	0.1025
0.35	0.8977	0.1183	0.35	0.9294	0.0971	0.35	0.9627	0.0742
0.36	0.8896	0.0907	0.36	0.9225	0.0691	0.36	0.9574	0.0456
0.37	0.8836	0.0630	0.37	0.9179	0.0409	0.37	0.9546	0.0166
0.38	0.8796	0.0351	0.38	0.9156	0.0122			
0.39	0.8780	0.0066						

$\mu'_1 = 0.16$			$\mu'_1 = 0.15$			$\mu'_1 = 0.14$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	7.496	4.475	0.03	7.449	4.247	0.03	7.376	4.014
0.04	5.659	3.352	0.04	5.631	3.184	0.04	5.582	3.010
0.05	4.564	2.677	0.05	4.547	2.544	0.05	4.515	2.407
0.06	3.839	2.226	0.06	3.830	2.115	0.06	3.810	2.002
0.07	3.325	1.901	0.07	3.322	1.808	0.07	3.310	1.712
0.08	2.942	1.656	0.08	2.944	1.575	0.08	2.938	1.492
0.09	2.646	1.463	0.09	2.651	1.392	0.09	2.651	1.319
0.10	2.410	1.307	0.10	2.418	1.244	0.10	2.422	1.179
0.11	2.218	1.178	0.11	2.229	1.121	0.11	2.236	1.062
0.12	2.058	1.068	0.12	2.072	1.016	0.12	2.082	0.9629
0.13	1.924	0.9735	0.13	1.939	0.9259	0.13	1.951	0.8770
0.14	1.809	0.8908	0.14	1.826	0.8468	0.14	1.840	0.8016
0.15	1.710	0.8176	0.15	1.728	0.7766	0.15	1.744	0.7344
0.16	1.623	0.7519	0.16	1.642	0.7135	0.16	1.660	0.6741
0.17	1.547	0.6926	0.17	1.567	0.6564	0.17	1.586	0.6192
0.18	1.480	0.6384	0.18	1.501	0.6042	0.18	1.520	0.5688
0.19	1.420	0.5885	0.19	1.442	0.5560	0.19	1.462	0.5223
0.20	1.366	0.5423	0.20	1.389	0.5112	0.20	1.410	0.4790
0.21	1.318	0.4991	0.21	1.341	0.4693	0.21	1.364	0.4383
0.22	1.275	0.4586	0.22	1.299	0.4299	0.22	1.322	0.3999
0.23	1.236	0.4204	0.23	1.260	0.3926	0.23	1.284	0.3635
0.24	1.201	0.3841	0.24	1.226	0.3570	0.24	1.251	0.3287
0.25	1.169	0.3495	0.25	1.194	0.3230	0.25	1.220	0.2952
0.26	1.140	0.3162	0.26	1.167	0.2903	0.26	1.193	0.2629
0.27	1.114	0.2842	0.27	1.142	0.2587	0.27	1.169	0.2315
0.28	1.091	0.2531	0.28	1.119	0.2279	0.28	1.143	0.2009
0.29	1.071	0.2229	0.29	1.100	0.1978	0.29	1.130	0.1707
0.30	1.053	0.1933	0.30	1.083	0.1681	0.30	1.115	0.1410
0.31	1.037	0.1642	0.31	1.068	0.1389	0.31	1.102	0.1114
0.32	1.024	0.1354	0.32	1.057	0.1098	0.32	1.092	0.0818
0.33	1.013	0.1068	0.33	1.047	0.0806	0.33	1.085	0.0519
0.34	1.004	0.0780	0.34	1.041	0.0512	0.34	1.081	0.0216
0.35	0.9984	0.0491	0.35	1.037	0.0215			
0.36	0.9951	0.0157						

$\mu_1' = 0.13$			$\mu_1' = 0.12$			$\mu_1' = 0.11$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	7.273	3.775	0.03	7.138	3.529	0.03	6.970	3.277
0.04	5.513	2.832	0.04	5.422	2.650	0.04	5.308	2.464
0.05	4.468	2.266	0.05	4.403	2.122	0.05	4.323	1.975
0.06	3.777	1.887	0.06	3.732	1.769	0.06	3.674	1.648
0.07	3.288	1.614	0.07	3.257	1.514	0.07	3.216	1.412
0.08	2.925	1.408	0.08	2.904	1.321	0.08	2.875	1.233
0.09	2.644	1.245	0.09	2.631	1.169	0.09	2.612	1.091
0.10	2.421	1.113	0.10	2.415	1.045	0.10	2.403	0.9757
0.11	2.239	1.002	0.11	2.238	0.9412	0.11	2.232	0.8786
0.12	2.088	0.9084	0.12	2.091	0.8526	0.12	2.090	0.7953
0.13	1.960	0.8269	0.13	1.967	0.7755	0.13	1.970	0.7227
0.14	1.851	0.7552	0.14	1.861	0.7074	0.14	1.868	0.6583
0.15	1.757	0.6911	0.15	1.769	0.6465	0.15	1.779	0.6005
0.16	1.675	0.6334	0.16	1.689	0.5914	0.16	1.701	0.5479
0.17	1.603	0.5808	0.17	1.618	0.5409	0.17	1.633	0.4997
0.18	1.539	0.5323	0.18	1.556	0.4944	0.18	1.573	0.4550
0.19	1.482	0.4874	0.19	1.501	0.4511	0.19	1.519	0.4132
0.20	1.431	0.4454	0.20	1.451	0.4105	0.20	1.472	0.3737
0.21	1.386	0.4060	0.21	1.407	0.3721	0.21	1.429	0.3364
0.22	1.345	0.3686	0.22	1.368	0.3356	0.22	1.392	0.3007
0.23	1.308	0.3329	0.23	1.333	0.3006	0.23	1.359	0.2663
0.24	1.276	0.2987	0.24	1.302	0.2670	0.24	1.329	0.2330
0.25	1.247	0.2658	0.25	1.274	0.2344	0.25	1.304	0.2005
0.26	1.221	0.2337	0.26	1.250	0.2025	0.26	1.282	0.1686
0.27	1.199	0.2025	0.27	1.230	0.1712	0.27	1.264	0.1370
0.28	1.179	0.1718	0.28	1.212	0.1403	0.28	1.249	0.1056
0.29	1.163	0.1415	0.29	1.198	0.1096	0.29	1.238	0.0741
0.30	1.149	0.1114	0.30	1.187	0.0788	0.30	1.230	0.0421
0.31	1.139	0.0812	0.31	1.179	0.0477	0.31	1.227	0.0096
0.32	1.131	0.0508	0.32	1.175	0.0160			
0.33	1.127	0.0199						

$\mu_1' = 0.10$			$\mu_1' = 0.09$			$\mu_1' = 0.08$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	6.768	3.020	0.03	6.527	2.758	0.03	6.247	2.489
0.04	5.169	2.274	0.04	5.006	2.080	0.04	4.818	1.883
0.05	4.225	1.826	0.05	4.109	1.673	0.05	3.977	1.519
0.06	3.604	1.525	0.06	3.521	1.401	0.06	3.425	1.274
0.07	3.165	1.308	0.07	3.105	1.203	0.07	3.037	1.096
0.08	2.840	1.144	0.08	2.796	1.052	0.08	2.747	0.9591
0.09	2.588	1.012	0.09	2.558	0.9319	0.09	2.522	0.8497
0.10	2.387	0.9050	0.10	2.367	0.8327	0.10	2.343	0.7589
0.11	2.223	0.8146	0.11	2.211	0.7490	0.11	2.196	0.6816
0.12	2.087	0.7367	0.12	2.081	0.6764	0.12	2.073	0.6144
0.13	1.972	0.6684	0.13	1.971	0.6125	0.13	1.969	0.5546
0.14	1.873	0.6077	0.14	1.876	0.5553	0.14	1.879	0.5008
0.15	1.787	0.5529	0.15	1.795	0.5034	0.15	1.802	0.4517
0.16	1.713	0.5028	0.16	1.724	0.4558	0.16	1.735	0.4062
0.17	1.647	0.4566	0.17	1.661	0.4116	0.17	1.676	0.3638
0.18	1.589	0.4136	0.18	1.606	0.3701	0.18	1.624	0.3237
0.19	1.538	0.3732	0.19	1.557	0.3309	0.19	1.579	0.2855
0.20	1.493	0.3350	0.20	1.515	0.2936	0.20	1.539	0.2488
0.21	1.452	0.2985	0.21	1.477	0.2577	0.21	1.505	0.2132
0.22	1.417	0.2633	0.22	1.445	0.2229	0.22	1.476	0.1784
0.23	1.386	0.2293	0.23	1.416	0.1890	0.23	1.452	0.1440
0.24	1.359	0.1962	0.24	1.393	0.1556	0.24	1.433	0.1097
0.25	1.336	0.1635	0.25	1.373	0.1224	0.25	1.418	0.0753
0.26	1.317	0.1312	0.26	1.358	0.0892	0.26	1.409	0.0404
0.27	1.302	0.0990	0.27	1.348	0.0557	0.27	1.405	0.0047
0.28	1.291	0.0666	0.28	1.342	0.0216			
0.29	1.284	0.0337						

$\mu_1' = 0.07$			$\mu_1' = 0.06$			$\mu_1' = 0.05$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.03	5.927	2.217	0.02	8.035	2.865	0.02	7.351	2.434
0.04	4.604	1.683	0.03	5.564	1.941	0.03	5.160	1.662
0.05	3.828	1.362	0.04	4.365	1.481	0.04	4.104	1.278
0.06	3.319	1.145	0.05	3.663	1.204	0.05	3.485	1.044
0.07	2.959	0.9869	0.06	3.202	1.015	0.06	3.078	0.8836
0.08	2.691	0.8645	0.07	2.876	0.8765	0.07	2.787	0.7636
0.09	2.483	0.7657	0.08	2.631	0.7679	0.08	2.568	0.6689
			0.09	2.440	0.6794	0.09	2.396	0.5900
0.10	2.315	0.6830	0.10	2.286	0.6047	0.10	2.256	0.5227
0.11	2.178	0.6121	0.11	2.159	0.5398	0.11	2.141	0.4634
0.12	2.063	0.5498	0.12	2.053	0.4822	0.12	2.045	0.4101
0.13	1.966	0.4941	0.13	1.963	0.4303	0.13	1.963	0.3613
0.14	1.882	0.4435	0.14	1.886	0.3824	0.14	1.893	0.3158
0.15	1.810	0.3969	0.15	1.819	0.3380	0.15	1.834	0.2727
0.16	1.747	0.3534	0.16	1.762	0.2960	0.16	1.783	0.2314
0.17	1.692	0.3124	0.17	1.712	0.2560	0.17	1.741	0.1915
0.18	1.644	0.2733	0.18	1.670	0.2173	0.18	1.706	0.1521
0.19	1.603	0.2357	0.19	1.635	0.1795	0.19	1.679	0.1129
0.20	1.568	0.1991	0.20	1.606	0.1423	0.20	1.659	0.0734
0.21	1.539	0.1633	0.21	1.583	0.1052	0.21	1.648	0.0330
0.22	1.515	0.1277	0.22	1.566	0.0677			
0.23	1.496	0.0921	0.23	1.557	0.0294			
0.24	1.483	0.0561						
0.25	1.477	0.0194						

$\mu_1' = 0.04$			$\mu_1' = 0.03$			$\mu_1' = 0.02$		
$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$	$\sigma$	$\gamma$	$\delta$
0.02	6.582	2.000	0.02	5.733	1.564	0.02	4.833	1.135
0.03	4.719	1.383	0.03	4.251	1.104	0.03	3.778	0.8274
0.04	3.825	1.074	0.04	3.537	0.8690	0.04	3.252	0.6606
0.05	3.299	0.8832	0.05	3.109	0.7194	0.05	2.924	0.5475
0.06	2.949	0.7497	0.06	2.819	0.6110	0.06	2.696	0.4608
0.07	2.696	0.6478	0.07	2.606	0.5256	0.07	2.525	0.3888
0.08	2.504	0.5655	0.08	2.445	0.4544	0.08	2.393	0.3279
0.09	2.352	0.4959	0.09	2.312	0.3925	0.09	2.288	0.2685
0.10	2.228	0.4351	0.10	2.207	0.3368	0.10	2.206	0.2143
0.11	2.126	0.3806	0.11	2.126	0.2856	0.11	2.141	0.1619
0.12	2.041	0.3306	0.12	2.048	0.2372	0.12	2.094	0.1096
0.13	1.969	0.2839	0.13	1.990	0.1905	0.13	2.064	0.0561
0.14	1.909	0.2395	0.14	1.945	0.1445			
0.15	1.859	0.1967	0.15	1.911	0.0986			
0.16	1.818	0.1545	0.16	1.889	0.0517			
0.17	1.787	0.1125	0.17	1.881	0.0030			
0.18	1.765	0.0701						
0.19	1.753	0.0267						

$\mu_1' = 0.01$		
$\sigma$	$\gamma$	$\delta$
0.04	2.988	0.4289
0.05	2.761	0.3429
0.06	2.599	0.2693
0.07	2.481	0.2015
0.08	2.396	0.1355
0.09	2.344	0.0680

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13. ABSTRACT  <p>An earlier report gave tables for fitting <math>S_B</math> curves using the first four sample moments.</p> <p>The present tables can be used to fit <math>S_B</math> curves using the first two moments, and the extremes of the range of variation.</p>			